

## RESEARCH ARTICLES

### Patient-oriented Personality Traits of First-year Pharmacy Students

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**Objective.** To determine, using the Gordon Personal Profile-Inventory (GPP-I), if the personality traits of first-year pharmacy students match the traits required for patient-centered practice.

**Methods.** The GPP-I, which measures the personality traits of ascendancy, responsibility, emotional stability, sociability, cautiousness, original thinking, personal relations, and vigor, was administered to incoming pharmacy students at the beginning of their first semester.

**Results.** The pharmacy school had attracted students with strong traits of original thinking, followed by personal relations, and vigor. The students, however, were limited in emotional stability and ascendancy.

**Conclusion.** The pharmacy profession needs to be more proactive in projecting the desired image and communicate its increasingly challenging and patient-oriented practice to attract individuals whose personalities are conducive to current practice models.

**Keywords:** personality, Gordon Personal Profile-Inventory, patient-oriented practice, pharmacy students

## INTRODUCTION

The practice of pharmacy has evolved over time, from compounding/manufacture to distribution, to the era of clinical pharmacy, and eventually to pharmaceutical care, placing the patient as the main focus of practice. Within the philosophy of pharmaceutical care, pharmacists accept direct responsibility for patients' drug therapy, thereby contributing to the outcomes of therapy, and improving quality of life.<sup>1</sup> In implementing pharmaceutical care, the World Health Organization (WHO) published the Good Pharmacy Practice (GPP) Guidelines which identified the following 4 main responsibilities of pharmacists: health promotion and ill health prevention; supply and use of prescribed medicines and other health care products; self-care; and influencing prescribing and medication use.<sup>2</sup> Achieving these responsibilities may not always be easy, however pharmacists should strive to reach these goals in the best interest of patients. While various studies exist illustrating positive clinical, humanistic, and economic outcomes in the provision of pharmaceutical care, implementation on a large scale remains lacking.<sup>3-5</sup> The need to reform attitude, knowledge, and skills, as well as introduce appropriate remuneration,

have been recognized as factors which could lead to facilitating and expanding the provision of pharmaceutical care.<sup>6,7</sup> Holland and Nimmo contend that implementing pharmaceutical care has been slow due to the varying levels of pharmacy practice in different regions, the focus on the responsibility of drug preparation and distribution, and the lack of clarity of the way pharmaceutical care fits into pharmacists' current practice.<sup>8</sup> They proposed the Total Pharmacy Care (TCP) model, incorporating the 5 existing practice models including drug information, self-care, clinical pharmacy, pharmaceutical care, and distribution. While TCP follows the GPP categories, the models are not identical. TCP is not limited to the provision of pharmaceutical care, but incorporates all pharmaceutical services required to meet the population's needs.

In many countries, pharmacists' contributions to health care currently include supplementary or independent prescribing, which places increased responsibilities on pharmacists and emphasizes patient-centered practice. However, this aspect of practice still requires thorough evaluation to assess its impact.<sup>9,10</sup> Pharmacists have been expected to adapt their practice with every shift of the profession's focus, which has made adopting a patient-centered approach difficult. Pharmacists themselves have been cited as a barrier to the delivery to pharmaceutical care.<sup>11-13</sup>

To accept responsibility for care, which presents a significant shift from previous models of practice,

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pharmacists must assume the functions of a caregiver, communicator, decision maker, teacher, life-long learner, and manager.<sup>14</sup> Personality traits that are conducive to these functions are needed. However, pharmacists who have entered the profession earlier follow a more product-focused than patient-centered model of practice. One of the main factors affecting receptiveness to change is personality type, because individuals tend to choose careers that match their personality.<sup>15-17</sup> Therefore, the large shift in pharmacy practice could result in resistance to change, gross dissatisfaction, and ineffective coping behavior due to incompatible personality traits.<sup>18</sup> This incompatibility might be lessened if pharmacy students possess a particular personality type. Baron and Byrne define personality as “the combination of those relatively enduring traits which influence behavior in a predictable way in a variety of situations.”<sup>19</sup> In this context, realizing the type of personality traits that contribute to a successful pharmacist is important for career guidance. Studies which have been conducted to identify practicing pharmacists’ personality traits generally indicate “a dominant personality, characterized by a strong sense of responsibility, conscientiousness, practicality, logic, and in about 1 in 5 practitioners, fear of interpersonal communication.” This profile matches the older practice models which focused mainly on technical problem solving with limited interaction with patients and other health care professionals.<sup>20</sup>

As the knowledge base of pharmacy school graduates becomes more patient-focused, the practice will change also to reflect the patient knowledge base.<sup>21</sup> Additionally, new pharmacy students need to have personalities that are conducive to patient-centered practice. They should possess the ability to reach out to patients and demonstrate care; exhibit personal responsibility and accountability; have effective communication skills and decision-making capabilities; and be able to solve problems that do not have a clear right or wrong solution.<sup>20,22</sup>

The aim of the present study was to determine if the personality traits of incoming pharmacy students match the traits required for patient-centered practice. Based on characteristics identified in the literature, higher scores in the GPP-I traits of personal relations, responsibility, cautiousness and sociability would be desirable, in addition to ascendancy and original thinking, the latter 2 of particular relevance to the delivery of pharmaceutical care.<sup>20,22</sup>

## METHODS

The study was conducted at The University of Malta, the only university in Malta, and the highest teaching institution of the state. The university has 11 faculties (ie, divisions comprising a number of related subject areas), one of which is the Faculty of Medicine and Surgery,

responsible for teaching and training all medical and pharmacy students in Malta.

First-year students in the Faculty of Medicine and Surgery at the University of Malta were profiled for the academic year 2007-2008 using the Gordon Personal Profile-Inventory, Global Edition in the English language (GPP-I).<sup>23</sup> This validated instrument helps identify the degree to which individuals possess the personality-based competencies necessary for success in a particular field of work. The GPP-I includes 2 components: the profile and the inventory. The profile (Table 1) measures 4 personality aspects which are significant in daily functioning: ascendancy (A), responsibility (R), emotional stability (E), and sociability (S). The inventory measures the 4 additional traits of cautiousness (C), original thinking (O), personal relations (P), and vigor (V). The sum of the scores of the profile section provide a measure of the test taker’s self-esteem. The GPP-I was developed through a factor analytical approach based on a review of factorial studies of personality. It uses a force-choice method, which requires the individual to self-score on sets of 4 descriptive phrases, selecting one most like themselves and one least like themselves, thus giving a 3-level ranking within each set of 4 items. The format is believed to be less susceptible to distortion by respondents motivated to make a good impression.<sup>23</sup>

Data were collected at the beginning of the first semester of the academic year 2007-2008. The GPP-I booklets were distributed during lecture hours to first-year undergraduate students in the Faculty of Medicine and Surgery, ie, students studying for a degree in pharmacy or medicine. The purpose of the study was explained to the students, and they were also informed that participation was voluntary. Additional demographic data relating to gender, age, parents’ occupations, course of study selected, and whether it was first-, second- or third-choice was gathered. Data was collected from both pharmacy and medical students to generate standardized percentile norms for incoming students.

The raw data was scored using the appropriate scoring keys. Data were analysed using SPSS, version 15 (SPSS, Chicago, IL) and descriptive statistics were calculated for the pharmacy student sample. Relationships were examined among the demographic characteristics of gender, parents’ occupations, choice of course of study, and the raw scores for each of the personality traits using independent sample *t* test and Kruskal-Wallis test. Independent sample *t* test and chi-square test were performed between the raw scores and standardized scores of pharmacy students and those of medical students to ensure that they were a homogenous group in terms of personality traits. These tests were conducted prior to commencing

Table 1. Definitions of Personality Traits<sup>23</sup>

Trait	High Scores	Low Scores
Ascendency (A)	<ul style="list-style-type: none"> <li>● Verbally ascendant</li> <li>● Adopts active role in a group</li> <li>● Makes independent decisions</li> <li>● Self-assured in relationship with others</li> </ul>	<ul style="list-style-type: none"> <li>● Plays a passive role in the group</li> <li>● Listens rather than talks</li> <li>● Lacks self-confidence</li> <li>● Lets others take the lead</li> <li>● Overtly dependent on others for advice</li> </ul>
Responsibility (R)	<ul style="list-style-type: none"> <li>● Able to attend to an assigned job</li> <li>● Persevering and determined</li> <li>● Can be relied upon</li> </ul>	<ul style="list-style-type: none"> <li>● Unable to finish tasks that do not interest them</li> <li>● Flighty or irresponsible</li> </ul>
Emotional Stability (E)	<ul style="list-style-type: none"> <li>● Emotionally stable and relatively free from worries, anxiety, and nervous tension</li> </ul>	<ul style="list-style-type: none"> <li>● Excessive anxiety, hypersensitivity, nervousness, and low frustration tolerance.</li> <li>● Poor emotional judgment</li> </ul>
Sociability (S)	<ul style="list-style-type: none"> <li>● Likes to be with and work with people</li> <li>● Gregarious and sociable</li> </ul>	<ul style="list-style-type: none"> <li>● Lack of gregariousness</li> <li>● General restriction in social contacts</li> <li>● In extreme, actual avoidance in social relationships</li> </ul>
Self-Esteem (SE)	<ul style="list-style-type: none"> <li>● Positive view about themselves</li> <li>● Comfortable taking action</li> <li>● Believes in their success</li> </ul>	<ul style="list-style-type: none"> <li>● Perceives themselves unfavourably</li> </ul>
Cautiousness (C)	<ul style="list-style-type: none"> <li>● Highly cautious</li> <li>● Consider matters very carefully before making a decision</li> <li>● Does not like to take chances or run risks</li> </ul>	<ul style="list-style-type: none"> <li>● Impulsive</li> <li>● Acts on the spur of the moment</li> </ul>
Original Thinking (O)	<ul style="list-style-type: none"> <li>● Likes to work on difficult problems</li> <li>● Intellectually curious</li> <li>● Enjoys thought-provoking questions and discussions</li> <li>● Like to think about new ideas</li> </ul>	<ul style="list-style-type: none"> <li>● Makes hurried/snap decisions</li> <li>● Enjoys taking chances and seeks excitement</li> <li>● Dislikes working on difficult/complicated problems</li> <li>● Not particularly interested in acquiring new knowledge</li> <li>● Not interested in thought-provoking questions and discussions</li> </ul>
Personal Relations (P)	<ul style="list-style-type: none"> <li>● Has faith and trust in people</li> <li>● Tolerant, patient, understanding</li> </ul>	<ul style="list-style-type: none"> <li>● Lacks trust/confidence in people</li> <li>● Critical of others</li> <li>● Annoyed /irritated by what others do</li> </ul>
Vigor (V)	<ul style="list-style-type: none"> <li>● Vigorous, energetic</li> <li>● Likes to work and move rapidly</li> <li>● Able to accomplish more than average person</li> </ul>	<ul style="list-style-type: none"> <li>● Low vitality/energy level</li> <li>● Sets a slow pace</li> <li>● Tires easily</li> <li>● Productivity/output below average</li> </ul>

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the analysis of the data. Homogeneity was confirmed at the level of significance of 0.05.

Percentile norm tables for the first-year students were calculated using cumulative percentile distributions to obtain standardized scores. The standardized mean scores were then classified as low (0 - 39<sup>th</sup> percentile), average (40<sup>th</sup> - 59<sup>th</sup> percentile) and high (60<sup>th</sup> - 99<sup>th</sup> percentile),<sup>24</sup> using the percentile norm table. Ethical approval for the study was obtained from the Research Ethics Committee of The University of Malta.

## RESULTS

Ninety-one percent (63) of first-year pharmacy students at the University of Malta participated in the study.

Table 2 summarizes the demographic characteristics of the pharmacy student sample. The majority of the students were female, having selected pharmacy as a first choice of study. In nearly 43% of cases, fathers' occupations were in professional, administrative, or managerial fields, while mothers predominantly did not work outside the home (47.6%), or otherwise (30.2%) in the same area as the father. Table 3 summarizes the mean raw scores on the traits measured by the GPP-I by gender and choice of course and overall mean. The highest mean score (24.1) obtained by the students was in original thinking. Males scored higher in the traits of ascendency and sociability, while those students who selected pharmacy as a first-choice scored higher in vigor ( $p < 0.05$ ). The parents'

Table 2. Study Sample Characteristics of First-Year Pharmacy Students in Study of Personality Traits

Characteristic	No. (%)
Gender	
Male	20 (31.7)
Female	43 (68.3)
Mean age, y	18.4
Age range, y	17-23
Course choice	
First choice	47 (74.6)
Second choice	16 (23.4)
Father's Occupation	
Professional, managerial, administrative (AB)	27 (42.9)
Higher clerical, clerical, supervisor, skilled craftsmen and technicians, owner/manager of small business (C1)	15 (23.8)
Skilled manual workers and foremen (C2)	12 (19.0)
Semi-skilled, unskilled, laborers, casual workers, and persons whose income is provided by the state (DE)	9 (14.3)

occupations had no significant impact on the scores ( $p > 0.05$ ).

Figure 1 provides a profile of the pharmacy students at entry level. Most students scored high in the inventory section, with particular reference to original thinking, personal relationships, and vigor. Original thinking registered the highest percentage (46%) of high scorers, while the lowest percentage (30.2%) of high scorers was recorded for emotional stability, the latter trait being the only one registering a majority (50.8%) of low scorers. Within the composite score of self-esteem, 47.6% of students scored low. The highest percentage of students (66.7%) scored average to high in the trait of personal relationships.

## DISCUSSION

The pharmacy school appears to have attracted students with strong traits of original thinking, followed by personal relations, and vigor. However the students were limited in emotional stability and ascendancy. This out-

come presents a picture of individuals who are intellectually curious and predisposed to interacting well with others because they tend to be tolerant, patient, and understanding. They present as being energetic and accomplish more than the average person; however, they tend to be anxious, nervous, and somewhat passive.

Patient-centered practice primarily requires professionals with the ability to care. The study's findings are encouraging because nearly 43% of participants achieved high scores, and just below 67% scored average to high in the trait of personal relations, essential for individuals opting for careers in health care. Pharmacy students exhibited a predisposition to caring and developed caring, collaborative relationships with patients and other health care providers.

Pharmacists' caring ability and pharmacy students' ability to provide care is supported by other studies which have focused on the delivery of direct patient care in pharmacy.<sup>25,26</sup> The profession has been encouraged to adopt specific caring behaviors and integrate them into routine practice.<sup>27</sup> However, inherent personality traits need to be enhanced through appropriate academic learning and professional socialization.<sup>22</sup> The largest proportion (46%) of students scored high in the trait of original thinking, which illustrates their predisposition to problem solving and creative innovation. These traits are in line with the newer practice models with an emphasis on quality outcomes in which pharmacists are expected to demonstrate problem-solving and critical-thinking skills, especially in areas of clinical practice and drug information. Students exhibiting original thinking are also more receptive to the nontraditional teaching methods such as student-centered, problem-based learning, to which pharmaceutical care lends itself well.<sup>28</sup> The solving of technical problems, however, also is compatible with the older distributive practice model.<sup>19</sup>

The top 4 personality traits in the present study are the same as those of a similar study using the GPPI in the US.<sup>29</sup> Of interest, the trait of ascendancy occupies the bottom ranking in the US study and next to the last in

Table 3. Student Mean GPP-I Scores by Gender and Choice of Course in Study of Personality Traits (N=63)<sup>a</sup>

Variable	Ascendancy	Responsibility	Emotional Stability	Sociability	Self-esteem	Cautiousness	Original Thinking	Personal Relations	Vigor
Gender									
Male	21.8 <sup>a</sup>	22.0	19.6	24.1 <sup>a</sup>	87.6	22.7	23.0	21.3	24.0
Female	18.1	24.0	18.5	20.0	80.9	23.1	24.2	22.0	23.3
Overall	19.3	23.4	18.9	21.3	83.0	23.0	24.0	21.8	23.5
Course									
1 <sup>st</sup> choice	19.6	23.3	18.5	22.1	83.7	22.6	22.0	21.1	24.3 <sup>a</sup>
2 <sup>nd</sup> choice	18.3	23.7	19.9	19.0	81.1	24.0	24.1	23.7	21.1

<sup>a</sup> Significance level of 2-tail  $t$  test:  $p < 0.05$



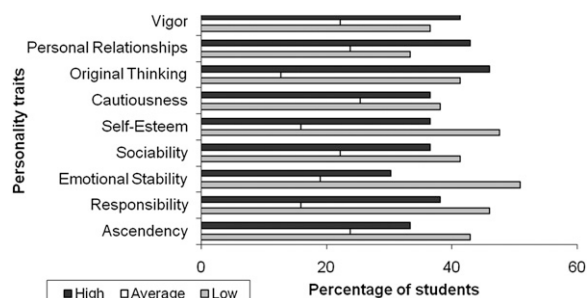


Figure 1. GPP-I Scores of Pharmacy Students Who Participated in a Study of Personality Traits

the present study. A lack of ascendancy in these students denotes individuals with a passive nature who are not predisposed to leadership roles. This is of concern as the current trends in practice require pharmacists to possess independent decision-making skills and take the lead within the health care team in assuming responsibility for therapeutic outcomes. The practice of pharmacy apparently still attracts individuals who identify with the older practice models such as drug distribution in which pharmacists followed a routine and newer model skills were not an essential prerequisite for practice.

Although as students get older, obtain degrees, and enter practice, their level of ascendancy may increase, along with all other personality traits, US data indicate that the trait of ascendancy ranked low for both pharmacy students and pharmacists.<sup>29</sup> The ability to communicate with patients and other health care professionals is essential to achieving desired patient outcomes. Individuals who have the ability to communicate and enjoy interacting with people would tend to achieve high scores in the trait of sociability. In this study, however, only 36.5% of students, most of whom were males ( $p < 0.05$ ), perceived themselves as being sociable and therefore predisposed to developing the appropriate communication skills to feel comfortable working in an environment requiring that skill. This finding may be explained in part because secondary state and faith school education in Malta remain single gendered, and females tend to keep a lower profile so they will not appear competitive.<sup>30</sup>

While apprehension over communication has previously been reported in pharmacy students, the rate was consistent with the 20% prevalence in the general population.<sup>31</sup> However, a concern in this study is that over 41% of students scored low in the trait of sociability. Unless adequately addressed through relevant undergraduate and continuing education courses, this could become a barrier to future practice.<sup>32-34</sup>

A large proportion of students (47.6%) obtained a low score in self-esteem, indicating that they were not comfortable taking action, and their self-worth was more

driven externally than internally. Individuals with low self-esteem may find it difficult to take and maintain control of situations. Of interest was that those participants who chose pharmacy as their first-choice of study scored higher on the trait of vigor, which is desirable in individuals working in fast-paced environments and as entrepreneurs.

Individuals with good leadership potential achieve high scores in traits of ascendancy, emotional stability, sociability, and self-esteem, in addition to original thinking and vigor. Therefore it was disappointing that the respondents proved to be low scorers in the traits measuring self-esteem, which strongly relate to decision-making abilities in conditions of ambiguity and time pressure. However, high scores were recorded in the traits of vigor and original thinking, the latter being associated with strategic thinking, a skill required in planning. Pharmacists need to possess leadership qualities to engage successfully in patient-oriented practice and exert an influential role in the health care system. Having pharmacists who are leaders will translate into improved patient care and medication safety, both of which contribute to a more efficient health care system.<sup>35</sup> Leadership and learning are interlinked, and thus the educational structure should be conducive to producing pharmacy graduates who are leaders.<sup>36</sup>

While the ideology of practice appears to be evolving, the personality of individuals who are attracted to pharmacy is not entirely conducive to current practice models. Therefore, the profession remains faced with a divergence between desired practice and practitioners' personality, making it difficult for the pharmacy profession to embrace fully patient-centered practice. Curricula may address this through introducing specific training in social skills, which through a process of disclosure and feedback would help an individual to modify certain traits, enabling a better fit between personality and the profession.<sup>37</sup> While other significant educational and structural resources may have been invested to encourage behavior change within the profession, resulting in questionable success,<sup>38</sup> it may be preferable to focus on attracting individuals to the profession who possess the desired personality traits to embrace the required skills to deliver patient care.

Some limitations need to be acknowledged and addressed regarding the study. The small sample size used is of concern; however, this number constituted over 90% of first-year students enrolled in pharmacy school in the entire country, as there is only 1 university offering a degree in pharmacy. The study was also the first in a series to follow these students through school and eventually their professional practice, leading to a better consolidation of

results. Because the number of first-year pharmacy students was small, it was not possible to generate standardized percentile norm tables using just first-year pharmacy student data. Therefore the standardized percentile norms were based on incoming students in both pharmacy and medicine, following confirmation of homogeneity of data. Another limitation is that the GPP-I was not standardized for the Maltese population at the time of the study, and cut-off points used in other countries were adopted.

Despite its limitations, this study provided an insight into the personality profile of students attracted to the profession of pharmacy. Highlighted was the need for the profession to be more proactive in projecting the desired image, and communicating its increasingly challenging and patient-oriented practice, in order to attract individuals whose personality is conducive to current practice models.

## CONCLUSION

The high scores obtained by students in the traits of personal relations and original thinking are conducive to them engaging in patient-oriented practice. However, the lower scores obtained in the trait of ascendancy indicates a lack of predisposition towards leadership roles, which are essential for current practice trends. Only 2 out of the 6 GPP-I traits identified in the literature as desirable for patient-oriented practice obtained high scores in the present study. These findings imply that the profession is still faced with a lack of convergence between the desired practice and practitioners personality traits, identifying personality as one of the barriers towards the profession fully embracing patient-centered practice.

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